

Reducing N₂O Losses from Cropping Systems for Environmental Credits with Fertilizer BMP's

Collaborators: The Fertilizer Institute, Camco Clean Energy, ClimateCHECK, The Climate Trust

Project Funding : Total \$2,861,250; USDA \$1,428,694

Location: Iowa, Illinois

Project Description: Three goals of this project include:

- Creation and refinement of a program to engage and enroll farmers and landowners to generate emission reduction credits from nutrient management changes
- Adaptation of the Alberta Nitrous Oxide Emission Reduction Protocol (NERP) to the Midwestern U.S., based on a review of scientific literature on N₂O emissions from this region
- Comparison of protocols for their applicability, transaction and verification costs, value of credits, and their ability to incentivize practice changes.

The untested market for credits generated from nitrogen management gives this project a unique opportunity to develop and refine a program to generate emission reduction credits. With multiple methodologies available and low market participation, this project can serve multiple functions. Bridging the gap between the carbon market and crop producers will help in understanding willingness to share management information to verify reduced emissions. It will also examine different methodologies to provide feedback regarding effectiveness of emission reduction credits as an incentive to drive practice change. The program developed to generate credits is named Nitrace. Nitrace is a development of Camco Clean Energy, an experienced international developer of clean energy and emission reduction projects. Nitrace promotes principles of 4R ("Right" Source, Rate, Time, and Place) nutrient stewardship and will be examining how implementation of improved nutrient management practices can be credited by environmental markets.

Challenges with data collection and participation are evident from our outreach efforts. Management data is not routinely shared outside of people involved in the decision making process. Documentation and verification of practices for crediting have not occurred and their impact on producer participation remains unknown. Finding early adopters willing to share data is a barrier given the unknown value of credits and market uncertainty. Also, prior experience with environmental crediting markets in this region has been negative, with crediting activities from prior crediting markets no longer functioning. Challenges remain for both widespread adoption and pilot scale projects like this.

Although challenges with the crucial task of data collection are present, the team has made progress on connecting with a limited number of potential participants. The inclusion of EQIP program support might help attract participants in the coming year. Progress on the NERP adaptation and the associated scientific literature review have progressed on schedule.

